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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/028,703  | 12/28/2001  | Kwang-Hyun Shim      | P67498US0           | 3944             |
| 43569   | 7590        | 08/31/2006           | EXAMINER            |                  |
| MAYER, BROWN, ROWE & MAW LLP<br>1909 K STREET, N.W.<br>WASHINGTON, DC 20006 |             |                      | PWU, JEFFREY C      |                  |
|   |             |                      | ART UNIT            | PAPER NUMBER     |
|   |             |                      | 2143                |                  |

DATE MAILED: 08/31/2006 .

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/028,703

Applicant(s)

SHIM ET AL.

Examiner

Jeffrey C. Pwu

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claim 1 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The disclosure lacks clear written description in a description how to measure distances between a shared object and a client avatar to adjust transmission rates of a state renewal information.

Claim 5 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The disclosure lacks clear written description in a description on how to compare the calculated error value with the calculated threshold value, and selectively transmitting state renewal information according to a result of the comparison.

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3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 1 is vague and indefinite because it is unclear how to measure distances between a shared object and a client avatar in order to adjust a transmission rates of a state renewal information.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1-6 are rejected under 35 U.S.C. 102(e) as being anticipated by Huang et al. (US 6,226,669).

As broadly drafted and as best the Examiner can ascertain from the language of the claims, claims 1-6 do not define any step that differs from Huang et al.

Huang et al. teaches claims :

1. A method for transmitting state information in a client-server based networked virtual environment ("FIG. 1 is a schematic diagram showing the basic configuration of the shared

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multiple-participant 3D virtual-reality environment of the invention on the WWW ) in which a plurality of client computers are connected to a server computer through a network, comprising the steps of:

measuring distances between a shared object and client avatars corresponding to the client computers in the client-server based networked virtual environment; (col.8, line 35-col.9, line 16) and

adjusting transmission rates of state renewal information from the server computer to the client computers according to the measured distances. (“The reason of defining the DR time  $t$  as a logical time rather than the system clock time at each client site is that this can ensure that the avatar movement would be independent on the computing power at each different client site. The target frame rate for displaying the 3D virtual-reality world is 30 frames per second; and therefore, the unit for the DR time is defined as 1/30 of the system clock rate at the WWW server 100. In accordance with the Dead Reckoning method, if the difference between the actual avatar position and the predicted avatar position is greater than a threshold (hereinafter referred to as DR threshold), an Object-State PDU is generated to reflect such a change in the avatar position. Fundamentally, a greater DR threshold would cause a larger degree of visually-perceptible jerky motion in the avatar movement; and whereas, a smaller DR threshold would cause an increase in the Object-State PDU rate, which would cause a delayed display of the avatar change to all the other users participating in the same 3D virtual-reality world”; @ col.8, line 64-)

2. The method of claim 1, wherein said distance measuring step is selectively performed

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according to a result of determination after determining whether an event occurs by periodically checking a timer for generating an event message, further comprising the step of transmitting state renewal information to the client computers through the network on the basis of the adjusted transmission rate. (“t denotes the time required to move the avatar from P.sub.O to P, (hereinafter referred to as DR time), and is defined as a logical time based on the target frame rate of the 3D virtual-reality world provided by the WWW server 100 rather than the system clock time at each client site.”; @ col.8, line 57-)

3. The method of claim 1, wherein said transmission rate adjusting step comprises the steps of, calculating periods of occurrence of an event of the timer on the basis of the measured distances, and replacing a period of occurrence of an event of the timer with the calculated periods.

( $P = P_{\text{sub.O}} + V * t$ ; @ col.8, line 54)

4. The method of claim 3, wherein said event occurrence period calculating step is performed in such a way that as the measured distance is decreased, the period of occurrence of an event is calculated to be shorter, thereby increasing the transmission rate of state renewal information for the corresponding client avatar. (See Table PDUs with various frame rates and DR thresholds at col.9)

5. A method for transmitting state information in a client-server based networked virtual environment in which a plurality of client computers are connected to a server computer through a network, comprising the steps of:

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checking whether a shared object varies in its state, and calculating an error value between a varied actual state value and a value predicted by a corresponding client computer if the shared object is varied in state; (col.5, line 49-col.9, line 10)

measuring a distance between the shared object and a client avatar corresponding to the client computer using coordinate values; (col.8, line 35-col.9, line 16)

calculating a dead reckoning threshold value with the measured distance taken into account; and (see DR calculations/method)

comparing the calculated error value with the calculated threshold value, and selectively transmitting state renewal information according to a result of the comparison. (col.8, line 64-col.9, line 45)

6. The method of claim 5, wherein said threshold value calculating step is performed in such a way that as the measured distance is decreased, the threshold value is calculated to be smaller, thereby increasing the transmission rate of state renewal information for the corresponding client avatar. (col.8, line 64-col.9, line 45)

#### ***Response to Arguments***

7. Applicant's arguments with respect to claims 1-6 have been considered but are moot in view of the new ground(s) of rejection.

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8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey C. Pwu whose telephone number is 571-272-6798. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wiley can be reached on 571-272-3923. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



8/29/06

**JEFFREY PWU**  
**PRIMARY EXAMINER**